

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims

1. (Currently amended) A heat rod assembly for a pre-heater used in a vehicle, the heat rod assembly comprising:
 - a channel type lower heat rod 110;
 - an insulator installed at a bottom portion of the lower heat rod 110;
 - a positive terminal 130 fixedly installed on the insulator 120 lengthwise along the insulator 120;
 - a PTC device 140 coupled to the insulator 120 by interposing the positive terminal 130 therebetween; and
 - an upper heat rod 150 for covering an opening section of the lower heat rod 110.
2. (Currently amended) The heat rod assembly as claimed in claim 1, wherein an upper edge section of the lower heat rod 110 is inwardly bent such that the upper edge section covers an edge section of the upper heat rod 150.
3. (Currently amended) The heat rod assembly as claimed in claim 2, wherein an inner width of the lower heat rod 110 is identical to an outer width of the insulator 120.
4. (Currently amended) The heat rod assembly as claimed in claim 1, wherein the insulator

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~~120~~ is formed with a bottom recess, which extends lengthwise along the insulator ~~120~~ in order to receive the positive terminal ~~130~~ therein.

5. (Currently amended) The heat rod assembly as claimed in claim 4, wherein the insulator ~~120~~ is provided at both longitudinal ends thereof with fixing protrusions ~~123~~, which are inserted into coupling holes formed in the positive terminal ~~130~~.

6. (Currently amended) The heat rod assembly as claimed in claim 5, wherein stepped recesses ~~124~~ are formed at both sides of the bottom recess ~~125~~ of the insulator ~~120~~, insertion protrusions ~~122~~ are formed in the stepped recesses ~~124~~, and a distance between the insertion protrusions ~~122~~ is identical to a length of the PTC device ~~140~~.

7. (Currently amended) The heat rod assembly as claimed in claim 1, wherein the PTC device ~~140~~ is positioned on the insulator ~~120~~ corresponding to openings ~~121~~ formed in the insulator ~~120~~ by interposing the positive terminal ~~130~~ between the PTC device ~~140~~ and the insulator ~~120~~.

8. (Currently amended) A pre-heater for a vehicle, the pre-heater comprising :
a heat rod assembly ~~100~~ described in claim 1 ~~any one of claims 1 to 7~~;
a heat pin assembly ~~200~~ formed at both sides of the heat rod assembly ~~100~~ in parallel to each other; a negative terminal ~~300~~ aligned in parallel to the heat pin assembly ~~200~~;

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side frames 600 and 900 coupled to both sides of a coupling structure consisting of the heat rod assembly 100, the heat pin assembly 200 and the negative terminal 300; and

 housings 400 and 800 for coupling the heat rod assembly 100, the heat pin assembly 200, the negative terminal 300, and the frames 600 and 900 with each other at front and rear portions thereof.

9. (Currently amended) The pre-heater as claimed in claim 8, further comprising a coupling unit 500 laterally provided over middle parts of the heat rod assembly 100, the heat pin assembly 200 and the negative terminal 300 in order to couple the heat rod assembly 100, the heat pin assembly 200 and the negative terminal 300 with each other.

10. (Currently amended) The pre-heater as claimed in claim 9, wherein the coupling unit 500 includes a clip capable of coupling the heat rod assembly 100, the heat pin assembly 200 and the negative terminal 300 with the side frames 600 and 900.

11. (Currently amended) The pre-heater as claimed in claim 10, wherein the side frames 600 and 900 have a channel structure, both ends of the clip are bent such that the both ends of the clip are locked with flanges formed in upper portions of the side frames 600 and 900, and the housings 400 and 800 have coupling slots 450 and 850, respectively, for receiving end portions of the side frames 600 and 900.

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12. (Currently amended) The pre-heater as claimed in claim 8, wherein the heat pin assembly 200 includes a plurality of corrugate pins ~~210~~, which are fixedly arranged lengthwise along a pin plate ~~220~~.

13. (Currently amended) The pre-heater as claimed in claim 8, wherein the heat pin assembly 200 is coupled with the side frames ~~600 and 900~~ by interposing a pin protecting plate ~~700~~ therebetween.